

Application No. 10/019,816
Filed: March 27, 2002
TC Art Unit: 1643
Confirmation No.: 9944

AMENDMENT TO THE CLAIMS

1. - 216. (Cancelled)

217. (Currently Amended) A method for inhibiting growth of a cancer cell expressing a β integrin subunit, the method comprising:

~~treating the cancer cell with an effective amount of an agent comprising an amino acid sequence of the β integrin subunit that comprises a binding domain for a MAP kinase or a polypeptide moiety sufficiently homologous with the binding domain to bind to the MAP kinase, and wherein the MAP kinase is selected from the group consisting of members of the ERK and JNK MAP kinase families~~
a polypeptide, the polypeptide comprising a cytoplasmic fragment of a β integrin subunit providing a binding domain of the β integrin subunit for a MAP kinase, or the polypeptide having a modified amino acid sequence compared to the binding domain;

wherein the binding domain of the β integrin subunit incorporates an amino acid linker sequence that links opposite end regions of the binding domain together and which is non-essential for the binding of the MAP kinase, and the modified amino acid sequence has at least 50% overall amino acid sequence homology with the binding domain and sufficient amino acid sequence homology with both the end regions of the binding domain to bind to the MAP kinase and is other than a fragment of the β integrin subunit or other β integrin subunit, and wherein the MAP kinase is ERK2 and the β integrin subunit expressed by the cancer cell is selected from the group consisting of β 3, β 5 and β 6.

218. (Currently Amended) A method according to claim 217, wherein ~~the agent comprises an amino acid sequence of the β integrin~~

Application No. 10/019,816

Filed: March 27, 2002

TC Art Unit: 1643

Confirmation No.: 9944

~~subunit that comprises a binding domain for a MAP kinase~~
polypeptide comprises the binding domain for the MAP kinase.

219. (Currently Amended) A method according to claim 217, wherein
~~the agent comprises the polypeptide moiety sufficiently homologous~~
~~with the binding domain to bind to the MAP kinase~~ polypeptide
comprises the modified amino acid sequence.

220. (Cancelled)

221. (Currently Amended) A method according to claim 217, wherein
~~the agent further comprises a facilitator moiety that facilitates~~
~~passage of the amino acid sequence or the polypeptide moiety~~
~~across the cell membrane of the cancer cell and wherein the~~
~~facilitator moiety is coupled to the amino acid sequence or the~~
~~polypeptide moiety~~ polypeptide is coupled to a facilitator moiety
that facilitates passage of the polypeptide across the outer cell
membrane of the cancer cell into the cytoplasm of the cancer cell.

222-224. (Cancelled)

225. (Previously Presented) A method according to claim 217
wherein the cancer cell is a colon cancer cell.

226-237. (Cancelled)

238. (Previously Presented) A method according to claim 217,
wherein the cancer cell is a cancer cell of a cancer selected from
the group consisting of cancer of the lip, tongue, salivary

Application No. 10/019,816

Filed: March 27, 2002

TC Art Unit: 1643

Confirmation No.: 9944

glands, gums, floor and other areas of the mouth, oropharynx, nasopharynx, hypopharynx and other oral cavities, oesophagus, stomach, small intestine, duodenum, colon, rectum, gallbladder, pancreas, larynx, trachea, bronchus, lung, breast, uterus, cervix, ovary, vagina, vulva, prostate, testes, penis, bladder, kidney, thyroid and skin.

239-243. (Cancelled)

244. (Currently Amended) A method according to claim 217 wherein the ~~amino acid sequence or the polypeptide moiety~~ comprises an amino acid sequence selected from the group consisting of RSKAKWQTGTNPLYR (SEQ ID No. 2), RARAKWDTANNPLYK (SEQ ID No. 22), RSRARYEMASNPLYR (SEQ ID No. 23), and RSKAKNPLYR (SEQ ID No. 3).

245. (Currently Amended) A method according to claim 217 wherein the ~~polypeptide moiety~~ comprises the binding domain of the β integrin subunit in which one or more amino acids in a region of the binding domain that is non-essential to the binding of the MAP kinase has been deleted.

246-265. (Cancelled)

266. (Currently Amended) A method for ~~prophylaxis or treatment~~ of cancer in a mammal, comprising

providing a mammalian patient suffering from or believed to be at risk of suffering from cancer; and

administering to the said mammal an effective amount of an agent comprising an amino acid sequence of a β integrin subunit

Application No. 10/019,816

Filed: March 27, 2002

TC Art Unit: 1643

Confirmation No.: 9944

~~expressed by cancer cells of the cancer that comprises a binding domain of the β integrin subunit for a MAP kinase or a polypeptide moiety sufficiently homologous with the binding domain to bind to the MAP kinase, and wherein the β integrin subunit is selected from the group consisting of $\beta 3$, $\beta 5$ and $\beta 6$ integrin subunits~~a polypeptide, the polypeptide comprising a cytoplasmic fragment of a β integrin subunit providing a binding domain of the β integrin subunit for a MAP kinase, or the polypeptide having a modified amino acid sequence compared to the binding domain;
wherein the binding domain of the β integrin subunit incorporates an amino acid linker sequence that links opposite end regions of the binding domain together and which is non-essential for the binding of the MAP kinase, and the modified amino acid sequence has at least 50% overall amino acid sequence homology with the binding domain and sufficient amino acid sequence homology with both the end regions of the binding domain to bind to the MAP kinase and is other than a fragment of the β integrin subunit or other β integrin subunit, and wherein the MAP kinase is ERK2 and the β integrin subunit is selected from the group consisting of $\beta 3$, $\beta 5$ and $\beta 6$ integrin subunits and is expressed by cancer cells of the cancer.

267. (Currently Amended) A method according to claim 266 wherein ~~the agent further comprises a facilitator moiety that facilitates passage of the amino acid sequence or the polypeptide moiety across the cell membrane of the cancer cells and wherein the facilitator moiety is coupled to the amino acid sequence or the polypeptide moiety~~polypeptide is coupled to a facilitator moiety that facilitates passage of the polypeptide moiety across the

Application No. 10/019,816

Filed: March 27, 2002

TC Art Unit: 1643

Confirmation No.: 9944

outer cell membrane of the cancer cells into the cytoplasm of the cancer cells.

268. (Currently Amended) A method according to claim 266 or 267 wherein the polypeptide moiety ~~comprises the binding domain of the β integrin subunit in which one or more amino acids in a region of the binding domain that is non-essential to the binding of the MAP kinase has been deleted~~ has a modified amino acid sequence compared to the binding domain of the β integrin subunit and one or more amino acids in the amino acid linker sequence linking the opposite end regions of the binding domain together have been deleted in the modified amino sequence compared to the binding domain.

269. (Previously Presented) A method according to claim 266 or 267 wherein the cancer is selected from the group consisting of cancer of the lip, tongue, salivary glands, gums, floor and other areas of the mouth, oropharynx, stomach, small intestine, duodenum, colon, rectum, gallbladder, pancreas, larynx, trachea, bronchus, lung, breast, uterus, cervix, ovary, vagina, vulva, prostate, testes, penis, bladder, kidney, thyroid and skin.

270-271. (Cancelled)

272. (Previously Presented) A method according to claim 266 wherein the β integrin subunit is $\beta 6$.

273-274. (Cancelled)

Application No. 10/019,816

Filed: March 27, 2002

TC Art Unit: 1643

Confirmation No.: 9944

275. (New) A method according to claim 245, wherein all of the amino acids in the amino acid linker sequence are deleted in the modified amino acid sequence.

276. (New) A method according to claim 245, wherein the end regions of the binding domain are defined by respective amino acid sequences that are unchanged in the modified amino acid sequence compared to the binding domain.

277. (New) A method according to claim 217, wherein the polypeptide is up to 20 amino acids in length.

278. (New) A method according to claim 275, wherein the polypeptide is from 10 to 15 amino acids in length.

279. (New) A method according to claim 268, wherein all of the amino acids in the amino acid linker sequence are deleted in the modified amino acid sequence.

280. (New) A method according to claim 268, wherein the end regions of the binding domain are defined by respective amino acid sequences that are unchanged in the modified amino acid sequence compared to the binding domain.

281. (New) A method according to claim 266 or 267, wherein the polypeptide is up to 20 amino acids in length.

282. (New) A method according to claim 281, wherein the polypeptide is from 10 to 15 amino acids in length.